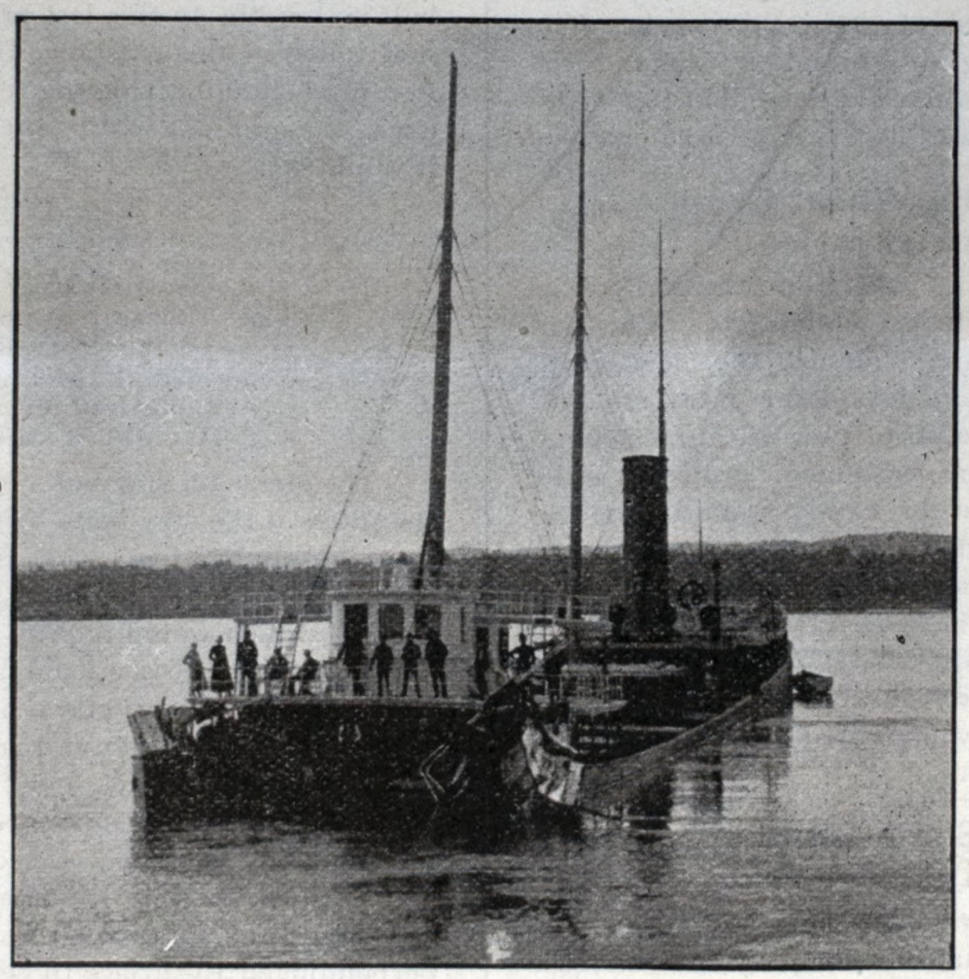
MARINE REVIEW.

VOL. IV. CLEVELAND, OHIO, THURSDAY, SEPTEMBER 3. 1891. No. 10.

Reid's Work on the Pontiac.

The accompanying engraving shows the steamship Pontiac in the Sault river after her collision with the Athabasca and before Capt. Reid had begun the work of raising her. There is now little doubt that the Pontiac will be in one of the Cleveland docks within a few days, and it may well be said that the job of wrecking performed on this boat is very creditable to the contractor. The Pontiac was on Tuesday towed down from the position near Wilson's dock to Sailors' Encampment, where it was intended to make additional repairs before taking the boat to Cleveland. It was found that she was drawing too much water to get over the Encampment channel, however, and a portion of her cargo of ore is being lightered. The bulkhead, by means of which the big boat was raised, was found to leak only 5 inches an hour, when pumps were put to work in earnest on the sunken hull.



Lake Freight Situation.

Lake freight rates are again tending upward and it is the general opinion that any advances secured now will hold to the close of the season. Vessel owners are not, however, looking for great advances in rates although there is every assurance of plenty of business until late in the fall at paying figures. As the iron market does not warrant shipments of any great quantity of unsold ore the grain shippers will get no severe competition in the movement of ore. It is evident, however, that Duluth shippers expect to find the lake fleet taxed to its utmost in caring for the grain even without a surplus ore supply to bring down. For boats to load next week Duluth has paid 3½ cents in a number of cases, and for tonnage that will arrive at the head of the lake on the 20th to the 25th of the present month 3¾ cents is freely offered. Grain is arriving in very large quantities and would be moving freely from both Chicago and Duluth but for a high range in prices. Toledo has been shipping wheat to Buffalo right along and is still offering a freight of 2 cents a bushel. Buffalo undoubtedly has sufficient elevator capacity to handle the very large portion of the big crop that will go to the seaboard this fall. There is little anxiety on this account.

If the iron market gave promise of any immediate change for the better, shipments of some surplus ore might be expected and the fall would be a very brisk one for the vessel owners, but pig iron is very dull and prices are only fair. Stocks of new material at first hands are not heavy but there is a difference of opinion as to the future, some dealers holding that the fall and winter trade will be large while others advance opinions to the contrary. As to business next spring, there is but one opinion, and that is that the iron makers must begin the new year with a big demand for raw material, on account of certain indications of supplies being well cleaned up.

Ore freights have ruled at 90 cents from Escanaba, $1.05 from Marquette and $1.15 from Ashland and Two Harbors, but vessel owners are now holding off for an advance over these figures. Coal freights are still based on a 50-cent rate to the head of Lake Superior as well as Chicago and Milwaukee, but docks at upper lake ports are all crowded and boats are again going up light. Unless there is from this time on a more active outward move of coal from upper lake ports to interior points a shortage, at least in soft coal, may be expected during the winter, notwithstanding heavy shipments early in the season, as the railways will need a great deal of coal in the movement of crops.

The light-house board has just issued a list of lights and fog signals, both Canadian and American, corrected up to the opening of navigation this year. The list is well arranged in book form. Masters desiring copies can secure them by addressing the light-house board at Washington, or the offices of the light-house inspectors at Buffalo, Detroit or Chicago.

It is a fact that on the Clyde and in other leading shipbuilding centers capitalists have been known to make fortunes by building vessels in dull times when the yards were badly in need of work and would build at low prices. The opportunity is now presented on the lakes and it would not be surprising if advantage is taken of it, but there is, of course, a drawback in the close money market.

CHICAGO LAKE INTERESTS.

WESTERN OFFICE, MARINE REVIEW,
No. 210 So. Water Street, CHICAGO, Ill., Sept. 3.

F. W. Wheeler & Co. will most likely build the new excursion steamer for the Graham & Morton line. Mr. Wheeler's course with the City of Chicago was so eminently fair that it seems to me that the contract should go to him. From what has come to the surface it is evident a great boat is to be built. She is to be a propeller. Great surprise was expressed by marine men when the City of Chicago was built two years ago that the side-wheel idea should have been followed for a steamer to be engaged in crossing the lake. She has proved to be a great excursion boat in a smooth sea, but when the lake is tumbling it is not so nice. Now side-wheel propulsion is to be thrown aside. The Goodrich people discarded it when they began building their new fleet and now it loses its last adherent. The new boat is to be much the largest boat engaged in the Chicago passenger traffic.

There is a good deal of talk among local vesselmen about building passenger boats for the World's Fair, but none of it has materialized into definite plans. It will, however, before the snow flies.

Whenever vessel captains are gathered together, the fate of the schooner Thomas Hume is discussed. It was a dire disappointment to Capt. Seth Lee the other day when what was thought to be a spar from the lost boat, six miles northeast from Chicago harbor, proved to be a fishing stake. Hackley & Hume, the Hume's owners, still believe that she was sunk by collision, but as large rewards have brought no evidence, it seems unlikely that any other boat was at fault. I have always believed that Capt. Albrightson was caught by a squall with all sail set and that the Hume capsized without a minute's warning. This seems to be the only reasonable solution of the great mystery.

Capt. Fitch was as proud as a man with a new house over the rebuilt steamer Ohio, when she came here for a load of grain this week. The Ohio looked well and was indeed something to be proud of. Capt. Fitch has a part interest in the Ohio. She retains her old name, but has "Chicago" painted on her stem as her port of hail.

Authoritative Report on the Wheat Crop.

Special Correspondence to the MARINE REVIEW.

DULUTH, Minn., Sept. 3.—The amount of wheat forwarded by lake last week was light, amounting to only about 300,000 bushels. This will not be greatly enlarged this week, but by next Thursday the new wheat ought to be moving out of here in large quantities. Lake rates are still steady at 3½ cents, with few charters. Receipts of new wheat are averaging from sixty to seventy cars a day and the movement growing, while Minneapolis is still shipping some old wheat for export. While the reports from the west still indicate considerable damage by the late frosts and by hot winds earlier in the season, the estimates of the crop do not materially decrease. A. J. Sawyer, the head of the Duluth Elevator Company said his elevators would handle 16,000,000 bushels of the crop and that the total receipts here for the year would run up to nearly 50,000,000 bushels. Wheat in store Monday amounted to 222,927 bushels, an increase for the week of 126,521 bushels.

Here is a Contract for Some Builder.

Special Correspondence to the MARINE REVIEW.

KINGSTON, Ont., Sept. 3.—The Bon Voyage has been so well patronized from Rochester this way this season that the company will increase its capital stock from $50,000 to $150 000 and build a new steamer 225 feet long, 36 feet beam and 14 feet hold Her engines will be 1,000 horse power, her staterooms number 350 and she will be licensed to carry 1,000 people. The Bon Voyage was built by Rogers & Bird, Saugatuck, and the machinery by the Montague Iron Works. There seems to be no reason why the new boat will not be built by the same parties.

A new line of steamers will be run next year in connection with the New York Central and the Canadian Pacific Railroad. They will run between Clayton and Montreal. Folger Brothers will do the building during the coming winter. Capt. Pierce is now busy with the plans.

After a dull spell lasting for a few days grain is coming east again in large quantities, necessitating work throughout the night and on the Sabbath. The gangs of shovelers are compelled to take spells of 36 hours before being relieved. Although the large craft are busy some small vessels are lying idle here, being out of the race of competition. One of their captains who was spoken to the other day said he could not afford to take less than 4 cents on grain from Toledo here, while the monsters could afford to carry it for less than 3 cents Then again the latter had an advantage in point of wages. They got their deck hands for little or nothing during the up-trip and even if they had no freight their expenses were less. There are always a number of sailors in the east who are willing to work their passage west and from port to port. Slowly but surely the small sailing vessels are disappearing. For several years past they have been confined to carrying coal across the lake. A few years more may see this trade fall to tows.

The United States revenue cutter Bibb, lying at Ogdensburg, has been condemned. She will be taken to Buffalo and sold next week.

The steamer City of Owen Sound, sunk two years ago, is being raised by the Collinsby Rafting Company, who have purchased her. She is in good condition. Seven pontoons are being used at the raising.

The schooner J. G. Worts while crossing the lake from Oswego with coal for Toronto, was caught in the recent storm and ran in here for safety. She lost her jibboom and a portion of the rigging. The schooner Robert Macdonald of Rochester has been converted into a huge yacht. She is floating around the islands with sixty pleasure seekers on board.

Before the Inspector.

EDITOR MARINE REVIEW:—Now that lake built steamers are beginning to engage in the ocean trade the live engineers in the lake region realize that if they wish to keep up with the onward moving tide of progression they must prepare themselves for examination for ocean licenses. But to many engineers the tantalizing question of what line of studies to take up in order to successfully pass examination before an ocean board is a puzzler. In most cases the inspectors at the seaboard are more thorough in their examinations than are those in the lake region. As a rule they demand first a certain amount of ocean experience as oiler, watertender or fireman. The only exception they make to this rule is when the applicant has secured a position and is recommended by the chief engineer of the ship he has engaged on.

The applicant must always figure out the regulation safety-valve and stay-bolt problem. Roper's rule is usually adopted for the safety-valve problem and I believe it is as near correct as any rule extant. It is as follows: "Multiply the area of the valve by the pressure in pounds per square inch, and multiply this product by the distance of the valve from the fulcrum; multiply the weight of lever by its center of gravity, or by half its length; to this last product add the weight of the valve and stem multiplied by their distance from the fulcrum, subtract this sum from the first product and divide the remainder by the total length of lever in inches; the quotient will be the weight required. Expresssed algebraically it would be:

$$\frac{a\ p\ f - \left(\frac{w\ l}{2} + v\ f\right)}{l} = \text{Weight}$$

a—Area of valve.
p—Pressure in pounds per square inch.
f—Distance of valve from fulcrum in inches.
w—Weight of lever.
l—Length of lever.
v—Weight of valve and stem.

The stress on stay-bolts is ascertained by multiplying the square of the pitch of the stay-bolts by the pressure per square inch—e. g. if the stays are pitched five inches from center to center, and the pressure is 100 pounds per square inch, the stress on each stay would be 5x5x100=2,500 pounds, which would require a stay-bolt ¾ inches in diameter, or about 42-100 square inch sectional area The United States inspection laws read: "No braces or stays hereafter employed in the construction of of boilers shall be allowed a greater strain than six thousand (6,000) pounds per square inch of section." It is also well to remember that an oblique stay will not support as much surface as a perpendicular stay of the same sectional area. According to Haswell, stress upon an oblique stay is equal to stress which a perpendicular stay supporting a like surface would sustain divided by the cosine of angle which it forms with perpendicular to surface to be supported Assuming, for example, that pressure per square inch is 100 pounds, area of surface to be supported 36 square inches and angle of stay 45 degrees, what would be the stress upon the stay? Cosine of 45°=.70711; then 100x36÷.70711=5091 pounds.

It is also very important that the applicant should know the density of sea water, and what destructive action it has upon iron and steel, and also how to counteract this chemical action. Where surface condensers are used some of the cylinder oil finds its way into the boilers. It is beneficial, therefore, to use a little sea water,as the brine has a tendency to cut up and granulate the heavy collections of oil and thereby prevents them from settling on the furnace crowns as has been the case on several lake steamers using surface condensers. Of course, the surface blow must be used sometimes but it requires experience and judgement to determine when to use it, as every gallon of water blown out of the boiler takes with it a certain amount of heat and an inexperienced man might easily blow more than his salary out through the surface pipe. When you go before the inspector you may be questioned on this and it is well to study it up.

These are only a few of the points to learn and I hope some others who have had experience may take up the subject and impart some of their knowledge to those who are seeking light in their profession.

Cleveland, Sept. 2, 1891. F. B. SMITH.

Some seagoing vessels are adopting an electrical device so arranged with the compass that it rings a bell in the navigator's room or captain's cabin every time the ship deviates from her course. The lake master who gets but half enough sleep at the best will not take kindly to this device, which would be of little use anyhow on these waters.

Record of Speed and Big Cargoes.

[*Masters or owners are invited to report improvement on this list.*]

Iron ore: Lake Michigan—Maryland, Inter-Ocean Transportation Company, of Milwaukee, 3,322 gross, or 3,737 net tons, Escanaba to South Chicago, draft 16 feet 6 inches; E. C. Pope, Dry Dock Navigation Company of Detroit, 3,221 gross, or 3,608 net tons, Escanaba to Ashtabula, draft about 16 feet. Lake Superior—E. C. Pope, Dry Dock Navigation Company, of Detroit, 2,828 gross, or 3,167 net tons, Ashland to Lake Erie, draft 14 feet 6 inches.

Grain: Western Reserve, Peter Minch, of Cleveland, 117,500 bushels of corn, Chicago to Buffalo; W. H. Gilcher, J. C. Gilchrist, of Cleveland, 114,982 bushels of corn, Chicago to Buffalo.

Speed: Owego, Union Line, of Buffalo, Buffalo to Chicago, 889 miles, 54 hours and 16 minutes, 16.4 miles an hour; Saranac, Lehigh Valley Line, of Buffalo, Buffalo to Lime-Kilns, 240 miles, 15 hours and 10 minutes, 16 miles an hour.

Iron Mining.

VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St.

Stocks.	Par Value.	Bid.	Asked.
Cleveland-Cliffs Iron Company	$100 00	$.....	$ 77 50
Champion Iron Company	25 00	.....	87 50
Chandler Iron Company	25 00	37 00	39 00
Chicago and Minnesota Ore Company	100 00	.....	100 00
Jackson Iron Company	25 00	90 00	.....
Lake Superior Iron Company	25 00	51 00	53 00
Minnesota Iron Company	100 00	70 00	73 00
Pittsburg Lake Angeline Iron Co	25 00	132 50	135 00
Republic Iron Company	25 00	25 00	26 00
Ashland	25 00	.....	53 50
Section Thirty-three	25 00	11 00	12 50
Brotherton	25 00	2 25	2 75

President W. D. Rees of the Republic Iron Mining Company has returned to Cleveland from the mine. Work has been resumed with nearly a full force but there is still some trouble from gases and smoldering timbers. Mr. Rees says that the company's output will be restricted to 25,000 tons on account of the fire, but this does not mean that contracts can not be fulfilled. All ore sold will be delivered, but it was intended to have some surplus ore. Mr. Rees will make no estimate of damages. There is little doing in mining stocks. The only announcement of importance is a promise of a dividend of $1 a share from the Champion company.

Notwithstanding that the Aurora mine has a stock pile of probably 100,000 tons it was not touched until a few days ago, and it is still said at the Cleveland office of the Penokee and Gogebic Development Company, which controls the Aurora, Colby and other Gogebic range properties, that very little of this large quantity of ore will be brought down. At the Colby also there is a large quantity of ore in stock, about 80,000 tons, but none of it is being shipped. Development work is going on at this mine, and it is said that the diamond drill has found enormous deposits of ore, enough to secure a large output for many years to come. The syndicate controlling these mines sold only a meager portion of its ore at the low prices that have ruled since spring, and it would seem that the intention is to leave even the greater portion of the ore already produced at the mines. A start toward shipping from the Aurora's stock pile may mean, however, that some unsold ore will be brought down if lake freights are not advanced greatly over present figures.

Michigan demands through an act of its legislature last winter an incorporation fee, which in the case of some new companies, capitalized at high figures as a matter of precaution, calls for the payment of $2,000 to $4,000 for the simple work of making out the necessary papers, and new companies are now being incorporated under the laws of other states. It is simply a repetition of the history of similar legislation in other states. A law of the same kind in Ohio together with an act taxing the stock of railway companies operating within the state, although the road-bed and other holdings of the same corporations are already taxed, has done more to drive capital to New York and other places than any other legislation that has been heard of in many years past.

Mining operations at the Dunn mine and at the Buffalo and other properties that have remained under Schlesinger control are probably more active than in any other part of the Lake Superior district. The Dunn is mining 800 tons daily and will soon double its output. Large quantities of ore were sold by these mines and it is said that they are now being worked economically, although making a big showing in shipments. The Dunn is moving 1,000 tons, including shipments from stock pile, and would add 500 or 600 tons daily to this movement if cars could be had. Shipments from this mine now aggregate about 105,000 tons. Last year's total output was but about 150,000.

Shipments of ore from Ashland on Wednesday, the 26th. inst., aggregated 805,489 gross tons. Some of the Gogebic mines ship a portion of their ore by the way of Escanaba, which is not included in the following showing the movement from the different properties by way of the Ashland docks: Ashland 162,881 tons, Aurora 44,463, Tilden No. 23,409, Tilden 19,303, Germania 203, Iron Belt 1,506, Montreal, South vien 31,049, Palms 19,912, See 33, Bessemer 20,709, Carey 53,736, Eureka 10,308, Germania 16,234, Mt. Hope 48,861, Norrie 174,585, East Norrie 84,593, Pabst 61,562, Ruby 913, Sunday Lake 35,594, Trezona 15,759; total 805,489 tons.

Charles H. Potter & Co., investment bankers and leading Cleveland dealers in Lake Superior iron mining stocks, have issued a pamphlet which deals mainly with official returns from the different banks of the city, but which also contains valuable information for owners of iron mining stocks as well as other investors. The plan is to publish a similar pamphlet following each call upon the national banks from the controller of the currency for a statement of the condition of their business. The idea is new and it will be the source of presenting to investors a great quantity of valuable data in concise form.

Members of the state board of equalization are now making a tour of the upper Michigan peninsula, with a view to establishing a system of property valuation in accordance with the law of last winter, which places a direct tax on mining property instead of a specific tax on the product. First plans in this direction resulted in an assessment that was not as great as the specific tax paid last year, but the board intends to have the mines pay a tax equal to that of last year.

Some work with the diamond drill has been commenced on a portion of the property of the Jackson Mining Company which has never been explored and it is expected that good deposits of ore will be revealed. It is thought that the management has in the past been too conservative in holding to old workings and has not given the vast area of land under its control the attention of which it is deserving.

The Ludington mine shipments of ore from Gladstone to the 27th inst. were 85,663 tons, and the Hamilton 18,694 tons. Of the two Vermillion range properties shipping from Two Harbors the Minnesota mine had moved 317,551 tons and the Chandler 220,631 tons.

Mr. J. B. Cooper, superintendent of the Calumet & Hecla smelting works at South Lake Linden, has been appointed by Governor Winans as the representive of the mining district of the state among Michigan's World's fair commissioners.

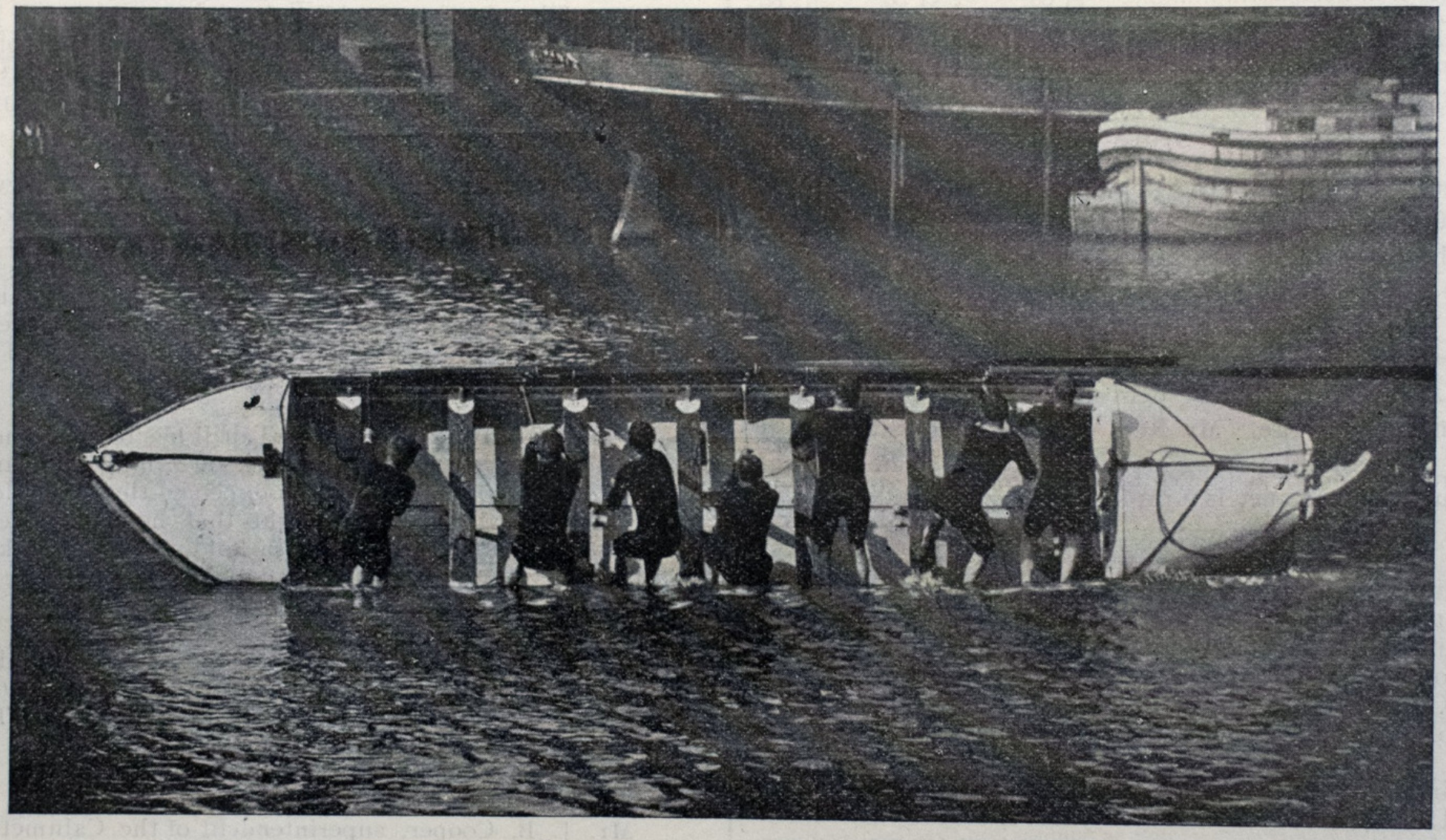
Lorillard's House Boat.

The Pusey and Jones Company of Wilmington, Del. is constructing a singular steamboat for Mr. Pierre Lorillard, of New York City. It is appropriately called a house boat, because it is in fact a house erected upon a scow boat, the hull being provided with triple expansion engines for its propulsion. The scow is 96 feet long, 25½ feet wide at the deck, and 20 feet wide at the bottom, with overhung main-deck guards. The house occupies all the deck space except a narrow passage along each side and very small spaces fore and aft. The main deck is to be divided into machinery, storage room, pantry, kitchen and quarters for the crew. The hull will contain an ice-house. The owners quarters are to be on the saloon deck. Here there will be a dining room 17½ feet long by 15½ feet wide, a sitting-room, four bedrooms, two bathrooms and the toilet rooms. On the hurricane deck there is to be a pilot house and studio. The interior is to be highly decorated and the furniture for the living rooms is now being constructed in New York from special designs made for the vessel. The house will rise perpendicularly 14 feet above the main deck. It is understood that the vessel is designed for the shallow waters of Florida. High speed is not expected, but the intention appears to be to supply, as far as possible in a navigable boat, all the comforts of a modern home.

Life Saving Service Drills.

Illustrations from the Illustrated Buffalo Express.

Each life saving crew on the lakes tries in its weekly drill to lower the time record in the beach apparatus drill and the capsizing of the life boat. Both methods are clearly shown by accompanying illustrations. The Cleveland crew under Capt. Goodman lowered the beach apparatus drill to 3 minutes and 35 seconds this week and claims a record of 10 seconds for the capsizing drill. Capt. L. O. Lawson and his Evanston university crew pride themselves on the time of 32 seconds for the boat drill. Evidently these crews time from different orders. The former is time elapsing between "Fasten oars" and "Recover." The work with the beach apparatus consists of firing the Lyle gun with a line over a spar 100 yards from the shore, hauling out and making fast ropes, running out the breeches buoy and returning one man from



the supposed wreck. The following summary of the last annual report will show the value of work done by this service to the merchant marine: There were 378 disasters to documented vessels within the scope of the service. There were on board these vessels 3,106 persons, of whom 38 were lost. The estimated value of property involved was $6,343,880. Of this amount $4,995,130 was saved and $1,348,750 lost. The number of vessels totally lost was 63. The first cut shows the crew drilling with beach apparatus, and the second shows the men regaining positions in capsized life boat.

Triple Expansion and Compound Engines on the Lakes.

A controversy has again arisen over the claim that the Cleveland steam yacht Peerless, owned by the Harkness estate and built by William Cramp & Sons of Philadelphia, was the first vessel in this country fitted with a triple expansion engine. The Peerless did not come out until 1886, and some of the Pacific coast journals now say that the Risdon Iron Works of San Francisco fitted engines of this type to the Balaena, a vessel built in 1883. It is also claimed that Charles E. Hyde of Bath, Me., designed a triple exansion yacht engine, which was built by the Goss Marine Iron Works of Bath in 1884. Lake builders of engines lost little time, however, in adopting the new type of engines after the first steps were taken to introduce them in America. Mr. John F. Pankhurst, general manager of the Globe Iron Works Company, Cleveland, was invited by the late J. V. Harkness, the millionaire director of the Standard Oil Company, to go to the coast and examine the Peerless while negotiations were pending for her purchase from the Cramps, and immediately upon his return Mr. Pankhurst began the work of designing similar engines for the Mutual line steamer Cambria, which came out about the time that the Union Dry Dock Company of Buffalo and S. F. Hodge & Co. of Detroit had also applied these engines to other big carriers.

It was probably twenty-five years previous to this time that the first compound engine came into use on the lakes. Mr. Thomas Fitzpatrick, who was among the first lake engineers and who is now making some inquiry in this direction, says that the first boat fittted with a compound engine on the lakes was the propeller Oregon, built at Marine City.

Latest Lloyds Supplement.

Only four new boats were added to the Inland Lloyds Register during August. They are the propeller J. D. Marshall valued at $35,000, built by J. C. Pereue of South Haven and owned by J. D. Marshall and others of Chicago; barge Harold, $35,000 value, built and owned by Capt. James Davidson of West Bay City, and the McDougall barges 115 and 116, owned by the American Steel Barge Company, hailing from Buffalo and valued at $90,000 each. These four new vessels have an aggregate tonnage of 3,447 and are valued in all at $250,000.

Vital Importance of an Outlet to the Seaboard.

"Every lover of his country, every man who takes pride in its growing wealth and development, must in the end see that direct communication between the lakes and the ocean is vital to our commerce and vital to the interests of the people." This is a quotation from a letter just received from Hon. Richard C. Parsons and printed below. The letter is in answer to a request for an opinion on the subject of the radical enlargement of the Erie canal, brought forward at this time by Mr. George H. Ely, who has had more to do with legislation favorable to lake commerce than any one man connected with the vast interests represented on these waterways. Col. Parsons represented the Cleveland district in Congress a few years ago and has always shown a deep inerest in the lake marine, he says:

"The REVIEW has always been foremost in advocating the needed improvements of the lakes and its influence has been widely felt. The project of reaching the Atlantic ocean by direct water communication from the lakes is one that has for a long time occupied public attention. The late Mr. Nutting, a former member of Congress from New York state, was a very warm advocate of such a measure, and many statesmen have tried to find some practicable scheme to get to the seaboard without too enormous a cost. As a rule, the great majority of our statesmen who have given this subject attention, have regarded the plan for a canal around Niagara Falls as the most feasible. The great size of the lake vessels, drawing fully 20 feet of water when loaded, of course prevents all access to the St. Lawrence by way of the Welland canal. Then the locks of the canal will not admit of a vessel more than 265 feet in length. Of course it is possible, but not likely, that the Canadian government will alter the canal, at a great expence, even to secure the enormous traffic of the lakes.

"There is a fatal objection in the minds of nearly all persons interested in this subject, that any plan for reaching the seaboard which involves the building up, at the expense of American commerce, a Canadian outlet will be a great mistake, both in times of peace and war. We prefer to have the absolute control of all artifical channels of communication from the lakes to the sea. No Congress will ever vote an enormous sum of money to connect the lakes and the Atlantic unless the money is expended solely on American soil. It is believed that the project of using the Erie canal is not only possible but practicable. How far local influence in New York or Buffalo may hinder the enterprise I cannot say; nor whether a canal can be so constructed from Buffalo to Troy, as to provide sufficiently safe means or profitable means of transit for our large vessels. Time is a great factor in the matter of cost of transportation, and I have as yet no data that gives me any light upon the cost of carrying freight in this new way. One thing is clear. The enormous commerce of the lakes, already so wonderful in extent, is rapidly expanding year by year. That the subject of finding water communications from the lakes to the seaboard by way of the St. Lawrence or Welland canal or Erie canal ought to be fully discussed I fully agree. All the information that can be obtained on the subject should be carefully sought and all plans carefully examined.

"That the time has come when our vessels must have an outlet to the sea we all realize. Every lover of his country every man who takes pride in its growing wealth and development, must in the end see that direct communication between the lakes and ocean is vital to our commerce and vital to the interests of the people."

The Citizens' Association, Marquette, Mich., seems to consist of something more than the usual boom real estate sharks. "Marquette," is the title of a book issued by this association,and it is quite a handsome volume,being nicely illustrated with photo-engravings. Some of the manufactories that it is gathering in are shown by cuts and the principle residences are also included.

An English Opinion of the Whalebacks.

"The Charles W. Wetmore is merely a mirage," said a well known naval architect to our representative. Can you honestly believe that our shipbuilders have been in the trade and studying the art of shipbuilding from generation to generation without having discovered the secret of cargo carrying yet?" Thus began an expression of opinion, the main drift of which was that the vessel was totally unfit for transatlantic service. The construction of the Wetmore was cheap with some idea of strength in it. There were two weak points in the vessel—the absence of water-tight bulkheads and the presence of the two superstructures, the lesser of which contains the anchor winch and the other the officers' apartments, a portion of the machinery, and the steering apparatus. This latter objection, it will be remembered, was very strongly put forward by Mr. M'Neill, of the British and Foreign Marine Insurance Company, and has been freely expressed by all practical men who have visited the ship. Our present authority is certain that the vessel would never stand an Atlantic gale such as would have to be encountered if any regularity of passage were kept up. An Atlantic trader must not, like a pleasure steamer, sail "weather and other circumstances permitting," but must go on her journey with the punctuality of clockwork. Taking a very allowable supposition that engines should break down—a contingency which is not unlikely when their construction is considered—of what value are four jurymasts with "mutton chop sails," which can be "stepped" in case of emergency, when the vessel is carrying a cargo of 3,000 tons?

To return to the subject of the superstructure for a moment. Those who have come over in the vessel seem confident that there is no wave big enough to sweep it away. But surely waves that will sweep the captain's bridge of an Atlantic liner out of sight, and will effectually clear the deck of no less a vessel than the Germanic itself, though they be some 20 or 30 feet above the level of the water, will also take away this flat deck, which is supported on three turrets and and a few steel tubes. Then look at the consequences of such a disaster. Your engine room is laid bare, your smokestack carried away, your officers swept overboard, and your steering gear taken with them. The portion of the crew which may be fortunate enough to be in their bunks forward at the time must roll about on the ocean without any means of guiding in a vessel which can hardly be seen by a passing ship. Then collisions are of frequent occurrence and there is no reason for supposing that the Wetmore is safe from them. If the vessel were struck amidships the hole alone is quite large enough to take in enough water to sink her at once and the build of the whaleback is so light that a very slight collision would be sufficient to make a hole in her. Then, again go into the machine room. There the arrangements are very bad —cruel in fact. Everything in the engine department of the boat is in semi-darkness.

"Taking the commercial capacities of the boat into consideration, it is found that grain is the only cargo which this vessel can bring over to the United Kingdom. There are no appliances on deck for the discharge of any cargo other than grain. No steam winches, no derricks or other arrangements which are absolutely necessary for the safe discharge of cargo in English ports. And, again, the speed is not great enough to insure the success of the boat. These two items alone are sufficient to reduce the value of such a ship to the commercial world and its seagoing carrying trade to a minimum."

"The difficulty which has met us in this case has been the extraordinary amount of misrepresentation which has been made with regard to the Wetmore and its capabilities. The public has been informed in the first place that the whaleback has averaged nine or ten knots an hour during her passage from Sydney, Cape Breton, to the Fastnet. This passage, they say, took the boat twelve days to complete. Now the distance is a little under 2,000 miles. The rate of progression, therefore, could not exceed seven knots. The only piece of absolutely reliable information on board is the official register of the dimensions and other particulars. No doubt the vessel has crossed the Atlantic, but during the most favorable months of the year, the passage being really no test of any great importance of the capabilities which the inventor and those on board claim for the Wetmore. To conclude, if the shape of the vessel will guarantee an independence of sailing power and an immunity from danger, how is it that our great shipbuilders have not discovered the secret before now?"—Liverpool Mercury.

MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

JOHN M. MULROONEY, ... } PROPRIETORS.
F. M. BARTON, ... }

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Published every Thursday at No. 510 Perry-Payne Building, Cleveland, O.

SUBSCRIPTION—$2.00 per year in advance. Convenient binders sent, post paid, 75 cents. Advertising rates on application.

The books of the United States treasury department contain the names of 3,510 vessels, measuring 1,063,063.90 tons in the lake trade. In classification of this fleet the lakes have more steamboats of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The classification is as follows:

Class.	Number.	Tonnage.
Steam vessels	1,527	652,922.25
Sailing vessels	1,272	328,655.96
Canal boats	657	67,574.90
Barges	54	13,910.09
Total	3,510	1,063,063.90

According to the report of William W. Bates, United States commissioner of navigation, 46 per cent of the new tonnage of the country was built on the lakes during 1889. This is a percentage greater than the work of the Atlantic coast and western rivers combined, and almost equal to the whole work on the Atlantic and Pacific coast. In 1890 the tonnage built on the lakes is but very little less than that built on the Atlantic and Gulf coasts. Tonnage built on the lakes during the past five years was as follows:

	No. of boats.	Net Tonnage.
1886	85	20,400.54
1887	152	56,488.32
1888	222	101,102.87
1889	225	107,080.30
1890	218	108,515.00
Total	902	393,597.03

Annual tonnage entries and clearances of the great seaports of the world, for 1889: New York, 11,051,236 tons; all seaports in the United States, 26,983,315 tons; Liverpool, 14,175,200 tons; London, 19,245,417 tons.

Tonnage passing through Detroit river during 234 days of navigation in 1889, amounted to **36,203,606** *tons. Ten million tons more than the entries and clearances of all the seaports in the United States, and three million tons more than the combined foreign and coastwise shipping of Liverpool and London.*

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 234 days of navigation, 10,557; tonnage, net registered, 8,454,435. Number of boats through Suez canal during 1890, full year, 3,389; tonnage, net registered, 6,890,014.

Entered at Cleveland Post Office as Second-class Mail Matter.

DEVELOPMENT of trade between Puget sound, San Francisco and other Pacific coast districts, some prospects of a general revival of shipping out of Atlantic ports and the building of vessels on the lakes for salt water service have combined to cause an interest among lake engineers in the conditions governing their chances of securing employment in the new fields demanding a high class of skilled labor Among the young men in this service on the lakes there is a particular interest attached to the requirements demanded by government inspectors of steam vessels in charge of coast districts. The disposition of inspectors on the coast in dealing with engineers from the lakes and the extent of examinations are also matters of importance. The MARINE REVIEW has accordingly arranged with a lake engineer who recently secured a license for salt water service to give some information on this subject. The first of a series of articles with this end in view will be found in another part of this issue. It is from Mr. F. B. Smith, who will shortly take Mr. Wade's yacht Wadena on her two year's cruise abroad.

CALIFORNIA and Washington are about to follow the example of New York, Massachusetts and other Atlantic coast states in the establishment of a naval reserve, and Puget sound and the Pacific will soon be represented in the movement for a naval as well as a land militia. Under the New York state enactment which followed the act of the last Congress in favor of a naval reserve, an attempt has been made within a few weeks at Buffalo to enlist support for the formation of a battalion in the new service, but another snag has been struck in connection with the lakes taking part in the movement. The opinion is expressed that that part of one of the treaties with Great Britain providing against maintaining more than one gunboat on the Great Lakes may prove a legal barrier in the way of a naval reserve. It would probably be well to submit this question to the proper government officials before anything further is done here.

AT the meeting in New York a few days ago of the National Board of Steam Navigation the question of establishing a national government department of commerce was again taken up and it was agreed that the want of unity in our marine system would be remedied by such a department, the importance of which is recognized by other nations. Attention was called to the emormous operations of the treasury department in other lines and the neglect of the country's marine interests on this account. The question of establishing a department of marine was before the last congress and will undoubtedly be brought up again during the coming winter.

IN another part of this issue will be found a letter from Hon. Richard C. Parsons, on the question of a radical enlargement of the Erie canal as a means of meeting the demand for a connecting waterway between the lakes and the Atlantic. Col. Parsons is well known to the vessel owners of the lakes who have solved the question of cheap transportation on inland waterways and his opinion on this great question coincides with that of other leading representatives of lake marine. Leading New York newspapers are now calling on the chamber of commerce, board of trade and other like organizations in the metropolis to give attention to this question.

A LONDON exchange notes the sale at auction a short time ago of a steamship, the Gillivara by name, for £18,100. The boat is of steel, twin-screw, built two years ago, classed 100 A1 in Lloyds and of 3,800 tons dead weight capacity. Such a steamer on the lakes would bring more than double the money.

The Lakes and Niagara Falls.

Although 265,000 cubic feet of lake water per second flows over the Falls of Niagara, representing at 216 feet fall 4,750,000 effective horse-power, the quantity of water in the Great Lakes is so vast in amount that it could be gradually drained off and fed over the falls at this rate of flow without any fresh supply of rainfall for at least a century. This is data presented in connection with the work of the Niagara Falls Water Power Company, and it means in other words that it would take with a leakage of 265,000 cubic feet of water per second across the rocky barrier, 100 years to drain the upper lakes were such a course possible. The outflow of the lake basin is about half of its rainfall, and the volume of water in the lakes including Lake Ontario is thought to be about 6,000 cubic miles. The theoretical value of the water that passes over the crest of this mighty dam has been represented as requiring all the coal that is now being mined in the world daily burned as fuel to make steam sufficient to pump back the same quantity of water. All the industries of America could be operated by this power, if it could be wholly transmitted.

Engineering Articles.

In the Engineering Magazine for September, published in the World building, New York, an article by E. W. Moir, assoc. M. I. C. E., treats of Tunnels and Modern Methods of Tunneling and is especially interesting to lake men, on account of its bearing on the St. Clair river tunnel at Port Huron and the matter of a tunnel instead of a bridge across the Detroit river at Detroit. Coleman Sellers, C. E., contributes an article on "How Niagara's Power will be Utilized," which is also of special interest in this locality.

Around the Lakes.

Martin Haberer, who was mate on the steamer North Star, has been appointed master of the Northern Light.

Wheeler & Co., of West Bay City, have begun the erection of a machinery plant in connection with their ship yard.

Homer J. Carr, Chicago representative of the MARINE REVIEW, has been appointed deputy collector of customs at that port.

Saginaw valley lumber shipments foot up 40,310,000 feet for August. This is about 2,000,000 feet less than shipments during August, 1890.

S. W. Insky and David Pollock have purchased the schooner Delos De Wolf from the T. W. Harvey Lumber Company of Chicago for $3,200.

Capt. James Murray, for a number of years connected with the Kingston & Montreal Forwarding Company at Kingston, died in Montreal on Friday last.

Three of Grummond's tugs, the John Owen, Winslow and Sweepstakes, towing in all sixteen schooners, passed up the Detroit river on Wednesday of last week.

Edward W. Gaskin, superintendent of the Union Dry Dock Company of Buffalo, will design a new fire boat, for which the council of that city recently appropriated $30,000.

Capt. Steve Chatterson, formerly of the Idaho, has taken command of the Saginaw Valley. Capt. Frank Stanton of the Valley will command the A. L. Hopkins, vice Capt. Herrick, resigned.

Capt. C. H. Ripson of Pulaski, N. Y., has sold one-half of the schooner John Magee to J. M. Jones & Son of Detroit for $3 000. The Magee is a canal schooner of 315 registered tons, was built in 1869, rates A2 and is valued at $5,000 in Lloyds.

Baker Bros., of Detroit, have bought the schooner S. C. Pomerey as she lies sunk and partially burned off Oak Orchard, Lake Ontario for $700. They also have the contract to blow up the old Missouri, on the beach below Sandusky, with dynamite, for which they are to receive $500 and such portions of the boat as they want.

The Evanston (Ill.) life saving crew, made up of Capt, L. O. Lawson and seven university students, Frank M. Kindig, E. B. Fowler, W.M. Ewing, J. A. Loining, W. L Wilson, R. N. Holt, W. W. Wilkinson, astonished Lieut. H. B. Rogers, inspector of the Eleventh district, last week, by capsizing and righting the life-boat in thirty-two seconds.

The Detroit and Cleveland Steam Navigation Company contemplates alterations in the steamer City of Detroit No. 1 that will better fit her for the excursion business between Cleveland and Put-in-Bay island, in which she has been engaged during the past two seasons. It is proposed to increase her capacity so as to accommodate 2,500 passengers.

The Chicago board of marine underwriters has adopted the following insurance rates on grain: To ports on Lake Michigan 40 cents;to Lake Superior 55 cents; on Lake Huron, Sarnia and Detroit river 40 cents; on Georgian bay and Lake Erie 45 cents; on Lake Ontario and Ogdensburg 55 cents; to Montreal 70 cents. The Lake Ontario and Montreal rates are much lower than usual for September.

Robert Inglis of Bayfield, well known throughout the Lake Superior districts, and Miss Margaret Walton, of Philadelphia, were married on board the steamer Japan on Wednesday last while the boat was on her way from Ashland to Bayfield. A few friends had been invited to make the short trip between the two Wisconsin ports and were treated to an agreeable surprise in the wedding ceremony.

At West Superior, Friday, the American Steel Barge Company launched whaleback No. 116, a tow barge. Colgate Hoyt, president of the company, witnessed the launch and talked about future operations of the company. He says a dry dock will be built at West Superior if the citizens contribute $25,000 or $30,000 in money or land toward the enterprise. The company now has two barges on the stocks that will be finished this fall. Mr. Hoyt says a half dozen or more barges will be built at West Superior during the winter.

It now seems altogether likely that none of the hold-over ore under contracts made a year ago last winter with the Chapin Mining Company will be carried. W. H. Wolf stated the other day that the Wolf & Davidson Steamship Company had cancelled their contract. This company has between 50,000 and 60,000 tons of ore due them to carry at $1.05 when the present season opened. The Milwaukee Tug Boat Line, whose $1.05 contract last season lacked 16,000 tons of being filled, will make no attempt to secure its fulfillment.—Milwaukee Evening Wisconsin.

Frank S. Manton, manager of the American Ship Windlass Company, while at Philadelphia last Friday, took orders from the William Cramp & Sons' Ship and Engine Building Company for the windlasses, capstans, chain indicators, steel stoppers, etc., amounting to about $48,000. This is in addition to the work already ordered and which they have nearly ready for delivery to this company. This is probably the largest order ever given for windlasses, capstans, etc., either in this country or Europe. During the past twenty-five years the American Ship Windlass Company have supplied the Cramp Shipbuilding Company with every windlass that they have used.

Work of constructing the Seul Choix light-house, Lake Michigan has begun and Col. Ludlow will shortly ask for proposals for the Old Mackinaw point light. Both structures will be of brick with stone trimmings and will cost $15,000 to $18,000 each. Seul Choix light will be a permanent fixed red of the third order and that at Old Mackinaw will be of the fourth order, flashing red every ten seconds. Two fog-signals are now in course of construction at Cleveland for the Point Betsey light. They are ten-inch steam whistles with a five-second blast alternating every ten and forty seconds. It is thought they will be put up before the last of September.

Cleveland Matters.

The first steel fish tug built on the lakes, was launched from the Cleveland Ship Building Company's yard Monday. She is for Ranney & Son and is 60 feet long, 12 feet beam and 4 feet deep. The engine is 8 and 16 inches by 12 inches stroke. The flat-sided Scotch boiler is the only one of the kind on the lakes and is the Cleveland company's No. 100. It is 4 feet wide, 6 feet 5 inches high and 7 feet 4 inches long, having a 24-inch furnace and fifty-one 3-inch tubes. The vertical independent air pump was designed by Mr. Angstrum and built by the Cleveland company.

When the beam engines of the excursion steamer Frank E. Kirby, which has attracted so much attention recently as the fastest boat on the lakes, were in the old revenue cutter John Sherman, thirty-four turns a minute was the best record ever made with them. They are probably turned much faster now in Kirby with a smaller wheel. The Sherman had a 26-foot wheel and she made 18 miles an hour when crowded. The Kirby and the City of Sandusky, Capt. Arthur Fox in the former and Capt. Brown in the latter, and both running on Lake Erie, are probably as well handled as any passenger boats on the lakes. The City of Sandusky is not, of course, a modern boat but she is well kept and managed to great advantage for her owners.

Wrecks and Heavy Losses.

The Canadian scow schooner British Lion, while en route Thursday from Romney, Ont., to Erie, Pa., capsized. Her crew of six men took to the yawl and were picked up by the steamer Nyack. The boat is a total loss. She was built in 1883, measured 80 tons, rated B2, and had a valuation of $800.

The schooner Millard Fillmore, a vessel of 277 tons, valued at $2,000 in Lloyds, rating B. 1 and owned by S. Sullivan of Detroit, sprang a leak on Lake Huron Thursday night and sank with a cargo of pig iron in thirty feet of water, off Rogers City, Hammonds bay. Capt. G. N. Fisk and crew escaped in a small boat.

In the gale of Thursday the Canadian tug Wales was caught on Georgian bay with the big barge L. Hatchkiss, lumber laden, in tow. The tug was compelled to abandon her tow. It is thought that the barge, which was also abandoned later by her crew, will prove a total loss. The barge registered 1,000 tons and was owned by the Muskoka Lumber Company.

Two small boats were numbered among the total losses last week. The tug Rambler, valued at $7,000 and owned by Capt. Yokum of Duluth, burned at Port Arthur, after being run out of Duluth to escape creditors, and the schooner Dawn went ashore at Fox Point, Lake Michigan, in a waterlogged condition She was afterward stripped and abandoned by her owners, Albert Williamson and Ole Halverson of Milwaukee.

Six Days to and from Lake Superior—Big Cargoes.

Two of the boats of the Minnesota Steamship Company, the Masaba and Maruba, have this season made the trip Cleveland to Two Harbors and return, 1,700 miles, loading and unloading about 2,200 gross tons of ore in a trifle less than six days. This is certainly the best work ever done in the ore trade. It is accomplished only when the boats strike the Sault canal so as to get down the river before nightfall. The boats of this fleet suffer no delay at any time, as they are loaded and unloaded at the docks of the company owning them. The Masaba left Cleveland at 8 p. m. on the 24th inst., went to Two Harbors and took on 2,200 tons of ore in about two hours, and returning arrived in Ashtabula at 6 a. m. Sunday, the 30th. She was unloaded and out of Ashtabula again at 6 o'clock Sunday evening, thus completing the round trip in 5 days and 22 hours.

The steamship E. C. Pope has again beaten her own Lake Superior cargo record, having brought down from Ashland on her last trip 2,828 gross or 3,167 net tons on a draft of 14 feet 6 inches.

Two of the big steel carriers recently turned out by the Cleveland Ship Building Company are making wonderful records as grain carriers. The steamship Western Reserve, owned by Capt. Peter Minch and others of Cleveland, is on her way to Buffalo with 117,500 bushels of corn, the largest grain cargo ever put into a lake carrier. Previous to this performance by the Western Reserve the W. H. Gilcher held the honor of having carried the largest load, her record being 114,982 bushels delivered at Buffalo from Chicago. The Gilcher has just delivered at Buffalo a mixed cargo of wheat and oats aggregating 143,284 bushels.

Some Work for the Shipyards.

Increasing business at the head of Lake Superior has compelled the Inman Tug Line to increase its fleet and a contract has been let with the Cleveland Ship Building Company for a large steel tug. The Inman company may follow this with another contract or purchase another boat. The new tug will be 85 feet over all, 75 feet at the load line, 18½ feet beam and 12 feet from top of keel to under side of main deck. It will have an iron deck, iron houses, wooden bulwarks and oak rail. The engine will be triple-expansion, with cylinders 13, 22 and 36 inches diameter by 24 inches stroke. The boat will have one boiler 11 feet diameter and 11½ feet long, designed to work 150 pounds of steam. The engine is to have steam reversing gear and independent air pump of the Cleveland company's double direct acting type, having two single-acting air pumps. She is to be completed for service early next spring.

As will be seen by reports from correspondents elsewhere in this issue, new passenger boats are talked of in different places The Graham & Morton company of Chicago has about decided to give Wheeler & Co a contract for a big passenger propeller, and the owners of the steamer Bon Voyage, which began service on Lake Ontario this season, have had plans prepared for a boat 225 feet long. It is also said that Folger Bros. of Kingston will build two passenger boats for service between Clayton and Montreal.

Coal Shipments.

It is unfortunate that the shippers of bituminous coal have no way of learning at this time anything definite regarding the total movement from Ohio ports. If such a statement could be secured it would have an important bearing on the movement of coal for the remainder of the season. Figures furnished by the collectors of customs are worthless, on account of the number of boats that clear light from one port and take on cargo at another in the same district, and all efforts on the part of the Pittsburgh coal shippers association to induce the railways to furnish a statement of shipments each month has failed. Lake Superior shipments on August 1 were fully 100,000 tons greater than the corresponding date a year ago, and it is known that shipments have been very heavy during the month just past, West Superior alone having received 46,000 tons of coal during the week ending August 29. The Buffalo Courier furnishes in net tons a complete statement of anthracite shipments for August and for the season to Sept. 1 as follows:

	1891.	1890.	1889.	1888
Month of August.....	289,660	269,900	378,920	347,360
Season to Sept. 1.....	1,433,910	1,111,190	1,297,850	1,507,190

During the season of 1888 shipments of anthracite were the heaviest on record.

Excelsior Marine Benevolent Association.

DEATH OF CAPTAIN JOHN COTTON.

In the death of Capt. John W. Cotton of Port Huron the Excelsior Marine Benevolent Association has lost another valued member. Capt Cotton was in his fifty-seventh year and had been sailing the lakes from his boyhood. At seventeen years of age he was master of a small schooner, the Lucy A. Blossom, and he was afterwards owner of the schooners C. M. Johnson, William Frisk and Nellie M. Cotton. He resided in Buffalo previous to 1870 but he has since been in service on the rivers and made his home at Port Huron. At the funeral, which took place Sunday, Captains A. Rattery, Ed. J. Kendall, F. Walters, Edward Thomas, L.Cary and C. Geel were pall bearers representing the E. M. B. A.

Ran Into the Grosse Point Beacon.

On the evening of August 20, about 7:30 o'clock, some vessel ran into the Grosse point beacon, doing considerable damage, of which no report has been made by the master of the vessel. Col. William Ludlow assisted by Capt. George P. McKay and others is making an effort to learn the name of the boat and it would probably be well for the master at fault to acknowledge the occurrence, as the vessel owners as well as the government officials are determined that such matters will at least be reported.

From Saginaw Valley Shipyards.

Special Correspondence to the MARINE REVIEW.

WEST BAY CITY, Mich., Sept. 3.—Wheeler & Co. are making room in their working plant for a machine shop where they propose to make all of their engines in the future. On the second floor a pattern shop will be placed, where the patterns for the castings will be made. At present they will not put in a plant for making their own castings, having made arrangements with Smalley & Co. of Bay City to do that portion of the work, but it will be but a short time before all of the work, including casting of engines, will be done by themselves. The keels for the four government light-ships are laid and work on the framing commenced. The track for the Brown hoisting apparatus is being extended so that it can be brought into use in building all four of the boats.

"It seems almost suicidal to attempt to put any more tonnage afloat," says Capt. James Davidson, "and I would not think of putting down the boat we are about to build if it were not for having the timber on hand. There is little money in the shipping business. The 'Big Four' with their two schooners in tow, are averaging a round trip a week between Two Harbors and Cleveland, and in the 56 days they have been out have carried 52,000 tons of ore, but have scarcely paid their running expenses."

Among the crew on the steamer Yulu was an amateur sailor, Lovell U. Grant,a local newspaper man and marine correspondent of the Chicago Tribune. He will go as far as Boston with the boat and if there is a favorable opportunity for shipping to Central America on her will accept it. The Yulu is provided with a sliding valve whistle which is calculated to scare the southern natives out of at least a year's growth every time it is blown. To guard against the noxious insects of the Central American coast every door and window on the boat is provided with screens.

The F. & P. M. steamer No. 2, is expected to arrive here this week for a $10,000 repairing at Wheeler & Co.'s yard.

Official Numbers and Tonnage.

The bureau of navigation, W. W. Bates, commissioner, assigned official numbers to the following lake vessels during the week ending August 29: Steam—J. C. Harrington, Buffalo, 8.69 tons gross, 5.76 net, No. 76,978. Sail—Essie M. Thompson, Milwaukee, 50.85 tons gross, 48.31 net, No. 136,239; Pandora, Chicago, 7.42 tons gross, 7.05 net, No. 150,544; Pappoose, Erie, 15.69 tons gross, 14.91 net, No. 150,545.

A Case Parallel to that of the Tuscarora.

A case similar to that against Capt. Macfarlane of the steamer Tuscarora in Chicago, who refused to move from the company's dock while unloading in order to let other boats pass, came up in Cleveland a few seasons ago when Peter Lynch was harbor master. The captain of the steamer City of Cleveland refused to move his boat from the owners' dock at the mouth of the old river bed in order to allow one of the Lehigh Valley boats to enter the main river. He was arrested, pleaded guilty and was fined. As the owners thought best to take this course, however, there was no settlement of the right of a boat to occupy her dock for several hours, or any unreasonable length of time, to the disadvantage of other craft. If the case had been contested in Cleveland it would have been tried under a city ordinance. The Cleveland occurrence shows that it is unreasonable to hold that the boat at the dock should not be compelled to move under such circumstances, as the boat blocked in her course here was a Lehigh Valley steamer while it was the Tuscarora of the same line that held other boats in idleness at Chicago.

Loss of Two Small Boats.

Three lives were lost in a collision between steamer Morley and the small propeller Jenks near Ballard's reef, Detroit river, Tuesday night. The Jenks was cut in two and sank in 20 feet of water on the west bank, just below the float light. She was owned by the Jenks Shipbuilding Company of Port Huron, registered 105 tons and was valued at $7,000. The Morley is owned by Hawgood & Avery of Cleveland. The channel is very narrow in this locality and the sunken boat, which is laden with stone, will prove a serious obstruction to navigation.

Advices from Beaver Island are to the effect that the schooner Evaline Bates, an old vessel without a rating, is ashore at that point and will prove a total loss.

The schooner Helena, sunk in collison in the Sault river some time ago, has been raised and is now at Sault Ste Marie discharging her coal cargo. The underwriters have decided to take her to Milwaukee for repairs.

Trying for Thirty Miles an Hour.

Norwood is the name of the fastest steam yacht afloat, having made 14 miles out of New York in 32 minutes. She was built for Norman Munro, a New York publisher, who has a weakness for fast yachts. He began with the Say When and Now Then, 22-mile boats, but they were slow in his opinion and he disposed of them. L. D. Mosher, Amesburyport, Mass., designed and built the Norwood, which is 63 feet long by 7½ feet beam. Her triple expansion engine indicates 400 horse power. The boilers is of the Thorneycroft pattern. She cost but $20,000. William R. Hearst, of the San Francisco Examiner, is also investing in fast water craft. The Herreschoffs turned out a boat 80 feet long and 12 feet wide for him, but he ordered her back to the yard for alterations when she refused to go more than 27 miles an hour. Another matter is bothering him. He don't know how to get her to the Pacific coast. She is too wide to go by rail and too frail to round the Horn.

Notices to Mariners.

The light-house board gives notice that on and after Sept. 5, a fixed white tubular-lantern light will be exhibited from a post 25 feet high, painted red, placed on the outer pier of the old wharf, Watch Point, Lake Champlain. The light should be visible two or three miles in clear weather.

The wreck of the small steambarge Edward Jenks, sunk by collision with the G. W. Morley, lies near Ballard's reef, Detroit river, very close to the channel. Capt. J. W. Westcott of Detroit advises vessels to pass to the eastward.

In General.

There are twenty-six engineers and sixty firemen always on board the steamship City of Paris.

Capt. Charles Ferry of the propeller Northern Light has been given charge of the City of Glasgow.

F. W. Sprague has just finished elegant oil paintings of the steamers Sauber and Hope, big wooden boats owned in the office of Mitchell & Co.

A snag two miles below the St. Clair canal, which was by some vessel masters considered dangerous to passing vessels, was removed a short time ago by order of Gen. Poe.

Mr. V. D. Nickerson, who recently made trips on the McDougall barge 107, Capt. Goodale, and the steamer A. D. Thomson, Capt. Ed. Hewett, speaks very highly of the whalebacks.

The steamer Presley made her last trip with coal to Duluth and a return cargo of ore from Ashland in 9 days and 11 hours, towing a big schooner down from Lake Huron. This includes time of unloading the coal and taking on ore.

The Union Dry Dock Company of Buffalo has finished work on the steel tug Pier, built for dock construction work in New York harbor. The tug left Buffalo Tuesday and will go to the coast by way of the Welland canal and St Lawrence river.

At the dock yard of the Ship Owners' Dry Dock Company Tuesday four big wooden boats were docked within twenty four hours. They were the propeller Superior at 4 a. m. schooner Charles Foster at 7 a. m., steamer J. H. Devereux 7 p. m. and John Harper at midnight.

Hewlings' directory of Steam specialties, published by A. J. Hewlings, 218 Lake street, Chicago, Ill., is probably the most complete book of its kind. It comprises a classified list of engineering appliances and steam specialties with name and address of the manufacturer. It has a morocco cover, is in convenient form and the price is $1.

While artifical rain experiments are being tried and rain producers are flourishing the Gordon Steam Pump Co., of Hamilton, O., have solved the problem and illustrate the solution. It consists of a Gordon pump placed on a platform in space and manned by "brownies" of all nations. The discharge is carried into the clouds and through them "waters all the earth."

Capt. F. B. Hackett of Amherstburg has, under instructions from Capt. George P. McKay, gone over that part of the Canadian channel near Colchester where two of the big ore carriers reported an obstruction, and after sweeping the locality thoroughly is satisfied that the obstruction is the rocky ridge making out from Little's point shoal and not marked on the chart.

REASONS

Why You Should Buy

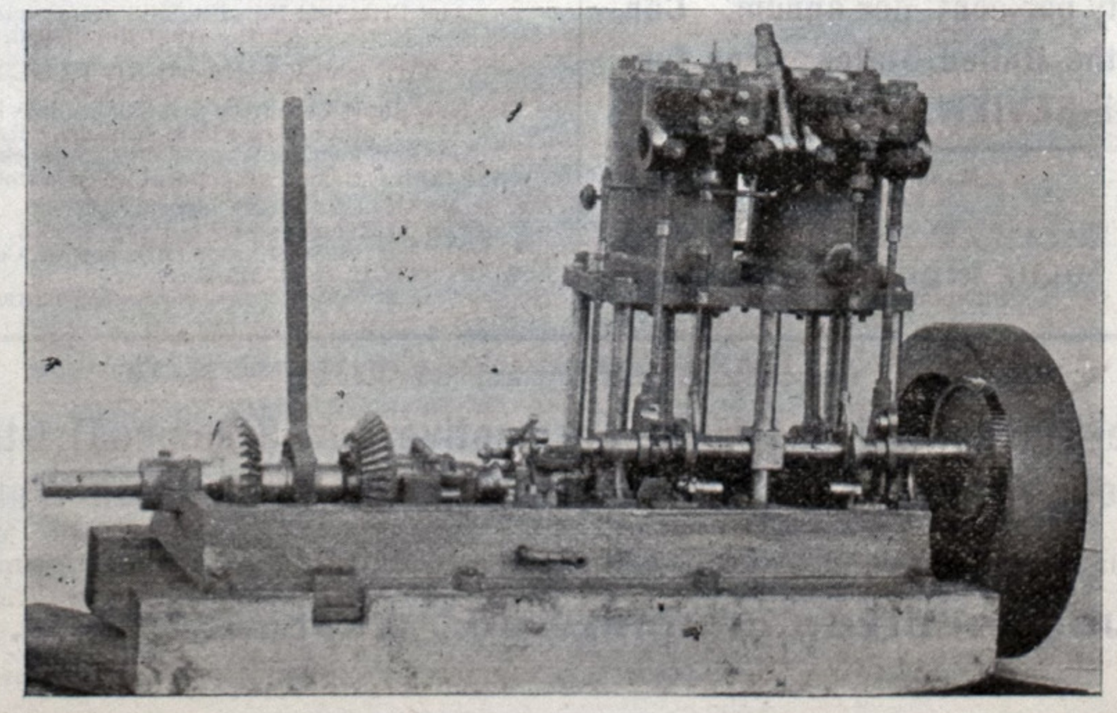
THE SINTZ ENGINE.

It gives more actual power for the cost and the expense of running it than any other engine on the market, using but one gallon gasoline per horse power in ten hours.

It occupies less space per horse power.

It requires no boiler, coal, wood or fireman, inspection or licensed engineer.

Can be used in the country, in mines, and such places independent of manufactured gases.



PRICES F. O. B. SPRINGFIELD.

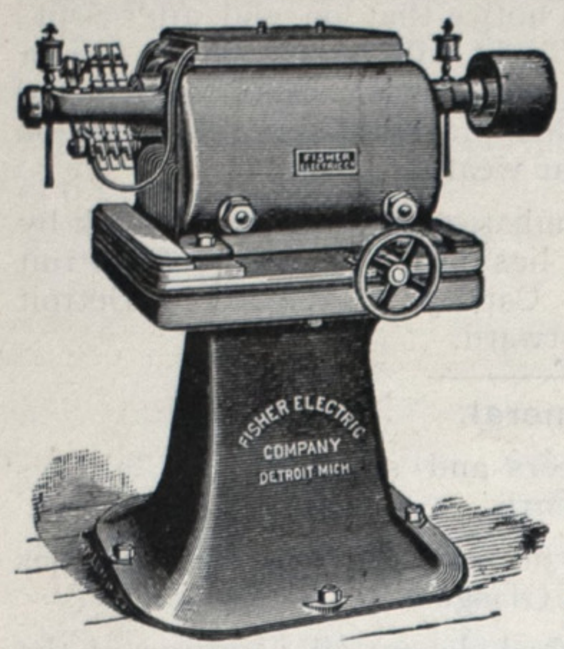
Horse Power.	Revolutions Per Min	Driving Pulley. Diam.	Driving Pulley. Face.	FLOOR SPACE	PRICE. Stationary.	PRICE. Marine.
1	350	6 in.	4 in.	1ft 9in x2ft 0in	$200 00	$275 00
2	320	9 in.	6 in.	2ft 6in x2ft 6in	275 00	300 00
4	320	12 in.	6 in.	2ft 9in x2ft 9in	380 00	410 00
6	320	15 in.	8 in.	2ft 6in x3ft 6in	485 00	520 00

MANUFACTURED BY

CLARK SINTZ,

SPRINGFIELD, OHIO.

SEE CAPT. PECK'S LETTER Regarding Incandescent Lighting Plant on the Steamer S. R. KIRBY.



NORTHWESTERN TRANSPORTATION CO.

DETROIT, MICH., Oct. 7, 1890.

FISHER ELECTRIC CO.,
Detroit, Mich.,

GENTLEMEN :—Replying to your inquiry regarding the operation of the 200 Light Incandescent Plant placed on the Steamer S. R. Kirby, we wish to say that the plant has operated during the season without an interruption and has not cost us one cent. No Lamps have been broken, and we would not be without it. Very truly yours,

E. M. PECK, President.

FISHER ELECTRIC COMPANY, 183, 185 & 187 Larned St., West, DETROIT, MICH

VESSEL AND MACHINERY EXCHANGE.

Space under this heading may be used gratis by our advertisers or subscribers to call attention to vessels or any craft, machinery, new or second hand, that they may have for sale. Those wanting machinery of any kind, or wishing to purchase vessels, are invited to take advantage of the same offer. Each item will be limited to three lines. Letters concerning same must mention number attached to item and be addressed MARINE REVIEW, 510 Perry-Payne Building, Cleveland, O.

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66—Steambarge that will carry 200 tons wanted for balance of season, or longer.

67—WANTED—To purchase a tug suitable for fishing purposes 60 to 80 feet long, engine 10 to 12 square; must have good deck room and be in good condition.

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69—WANTED—700-ton steamer with large per cent. of fullness.

70—Dredge hull wanted, or parties wanted to buy machinery for same.

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73—Triple expansion surface condensing engine, 14, 22, 36 and 24 inches for sale.

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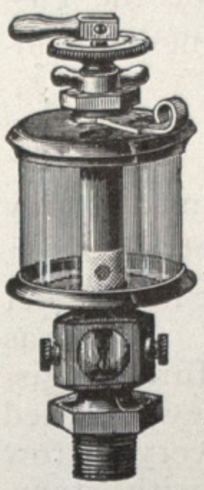

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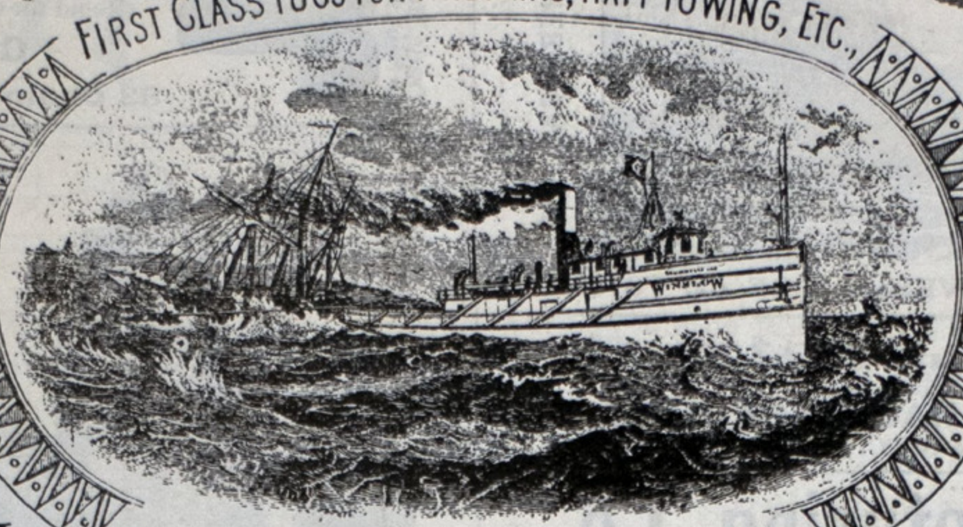

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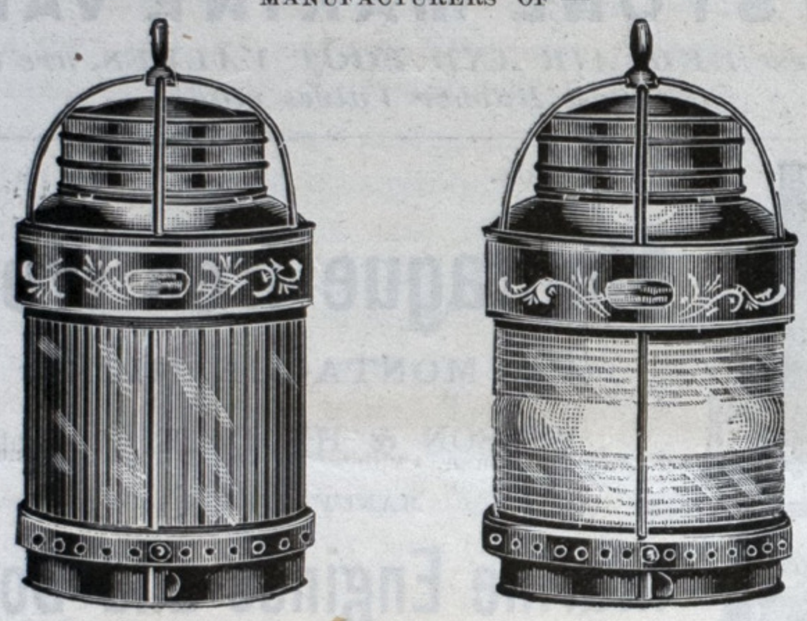

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TO IRON STEAMSHIP BUILDERS.—Treasury Department, Washington, D.C., August 5, 1891. Sealed proposals for the construction of a steam-propeller, to be named "Calumet," for the U. S. Revenue-Cutter Service, to be stationed at Chicago, Ill., will be received at this Department until 2 o'clock P.M. of Thursday, Sept. 10, 1891. Bids must be in accordance with the instructions accompanying the specifications, and should be addressed to the Secretary of the Treasury, and indorsed on the envelopes "Proposals for a Steam-Propeller for the U. S. Revenue-Cutter Service." Bidders must state the time in which they agree to complete the vessel. Specifications and plans for the work will be furnished to parties desiring to submit bids upon application to the Department. The right is reserved to reject any or all bids, and to waive defects, if deemed for the int rest of the Government so to do. A. B. NETTLETON, Acting Secretary.

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Lorain Accommodation, Departs		5 10 PM
Dover Accommodation, Departs	1 30 PM and	5 10 PM

All trains daily except Sunday.

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	Arrive.	Depart.
Youngstown Accommodation	*7 15 AM	†6 30 AM
New York and Pittsburg Express	†5 15 AM	*8 10 AM
Pittsburg Accommodation	*12 30 PM	*11 25 AM
New York & Pittsburgh Limited	*9 55 AM	*2 55 PM
Mantua Accommodation	*7 20 PM	*4 20 PM
Youngstown Express	†9 10 PM	†6 00 PM
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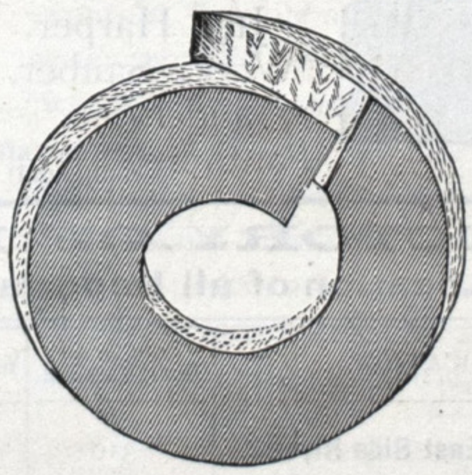

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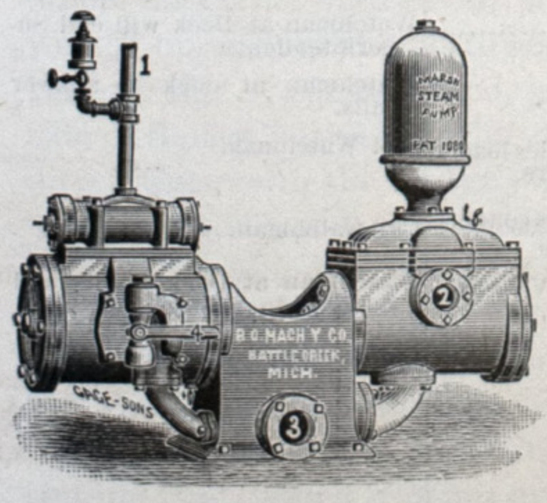

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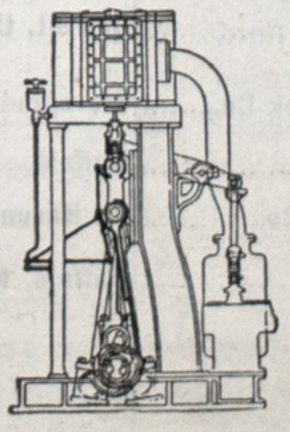

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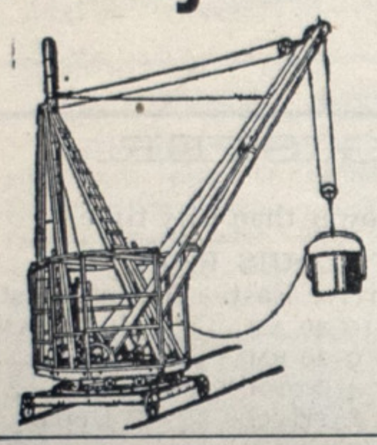

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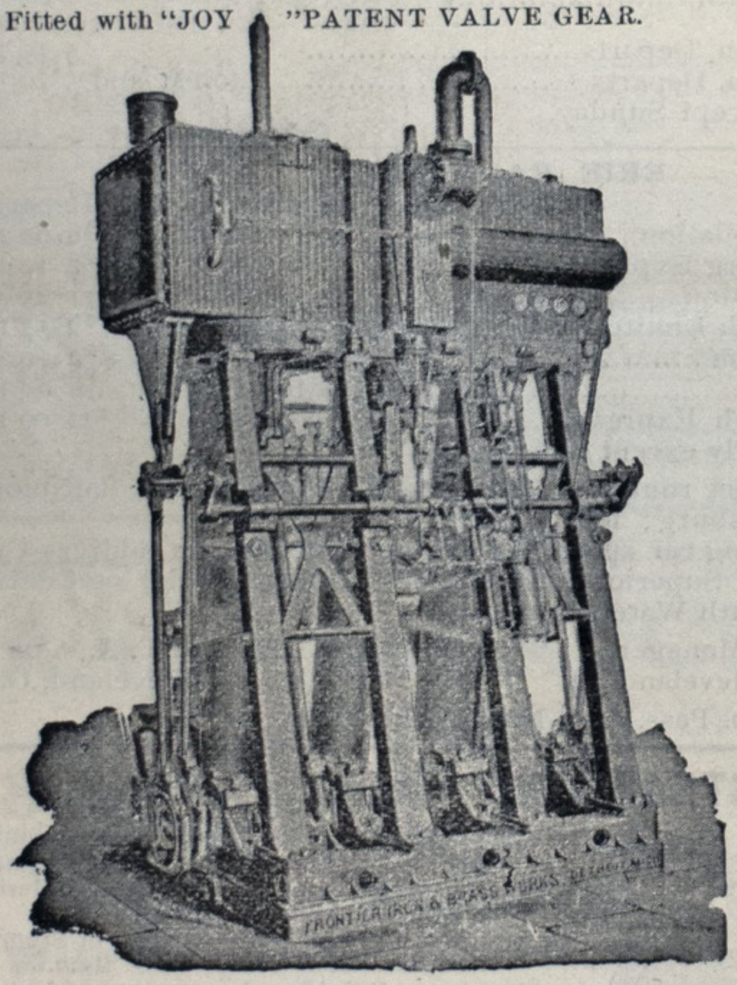

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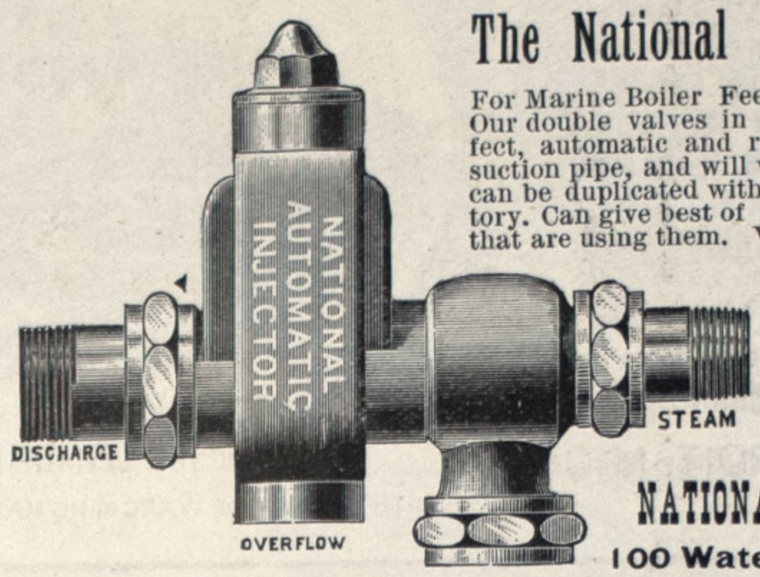

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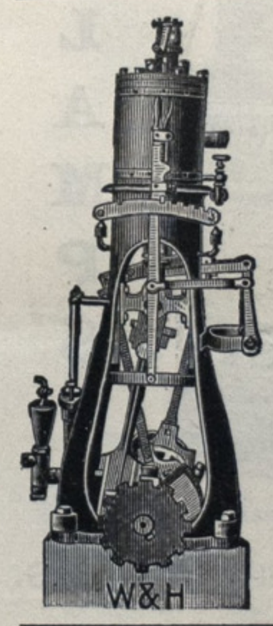

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